

549,793

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number  
**WO 2004/084073 A1**

- (51) International Patent Classification<sup>7</sup>: **G06F 11/28**
- (21) International Application Number:  
PCT/IB2004/000776
- (22) International Filing Date: 17 March 2004 (17.03.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
03290688.5 18 March 2003 (18.03.2003) EP
- (74) Common Representative: AXALTO SA; c/o Patricia RE-NAULT, Intellectual Property Department, 36-38, rue de la Princesse, BP 45, F-78431 Louveciennes Cedex (FR).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (71) Applicant (*for all designated States except US*): AXALTO SA [FR/FR]; 50, avenue Jean Jaurès, BP 620, F-92120 Montrouge (FR).
- (71) Applicant (*for MC only*): SCHLUMBERGER MALCO INC [US/US]; 9800 REISTERTOWN, OWING MILLS, MD 21117 (US).
- (71) Applicant (*for all designated States except US*): LY, Olivier, Thanh-Khiêt [FR/FR]; 89 avenue de la République, F-92100 BOULOGNE BILLANCOURT (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): AKKAR, Mehdi-Laurent [FR/FR]; 17 Rue Lafouge, F-94250 GENTILLY (FR). GOUBIN, Louis [FR/FR]; 3 Rue Brown Sequard, F-75015 PARIS (FR).
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**  
— *of inventorship (Rule 4.17(iv)) for US only*
- Published:**  
— *with international search report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD TO SECURE AN ELECTRONIC ASSEMBLY EXECUTING ANY ALGORITHM AGAINST ATTACKS BY ERROR INTRODUCTION

(57) Abstract: The invention concerns an automatic method to secure an electronic calculation assembly against attacks by error introduction or by radiation. The following are used: 1) Static information generated by the automatic process; 2) A dynamic part of the memory of the electronic system allocated by the automatic process; 3) Beacons and check points to mark out the code, introduced by the automatic process; 4) Beacon functions storing information in the dynamic memory; 5) History verification functions using the static information and the dynamic memory to check that no errors have been introduced.

WO 2004/084073 A1